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Metal Industry Indicators

Indicators of Domestic Primary Metals, Steel, Aluminum, and Copper Activity

April 2001

The growth rates of four of the five metal industry leading indexes are still in negative territory, but all have moved up at least 2.5% from their recent lows. Although the leading indexes are not yet signaling an end to the downturn in U.S. primary metals activity, they do hold out some hope that the recent sharp decline might have bottomed out. The metals price leading index and nonferrous metal products inventories still point to weak growth in overall metal prices in the near term.

The **primary metals leading index** was unchanged in March, holding at February's revised level of 122.3. However, the index's 6-month smoothed growth rate, a compound annual rate that measures the near-term trend, moved up to -3.7% from a revised -4.3% in February. Normally, a growth rate below -1.0% signals a downward near-term trend for future growth in metals activity, while a growth rate above +1.0% signals an upward trend.

Only four of the index's eight components were available in time to calculate the March leading index. Three of these index components moved down in March, but the Purchasing Managers' Index, which recorded its largest 1-month increase since September 1999, helped the index stay even with February.

Although it has moved up from a low of -6.9% in December, the growth rate of the leading index continues to signal further declines in U.S. primary metals activity in the coming months, but perhaps at a slower rate. The index will likely be revised next month when the remaining four components become available.

The **steel leading index** edged up 0.2% in February, the latest month for which it is available, rising to 104.1 from a revised 103.9 in January. The index's 6-month smoothed growth rate recovered somewhat in February, increasing to -6.0% from a revised -7.7% in January. Five of the index's nine components increased in February, with the largest positive contributions to the net increase in the leading index coming from the S&P stock price index for steel companies and the inflation-adjusted value of the M2 money supply. In contrast, the length of the average workweek in steel mills slipped to 42.7 hours, the shortest workweek since January 1992. Despite increasing the past 2 months, the steel leading index is not yet pointing to a recovery in domestic steel industry activity, even though the recent significant drop in activity appears to be leveling off.

The **aluminum mill products leading index** increased 0.5% in February to 160.2 from a revised 159.4 in January, and its 6-month smoothed growth rate rose to 2.2% from a revised 1.3% in January. Five of the index's seven components increased in February, paced by new orders for aluminum mill products and the growth rate of the inflation-adjusted U.S. M2 money supply. The component for the length of the average workweek in aluminum, sheet, plate, and foil establishments was the largest negative contributor in February, but it fell from an unusually high level in January. The growth rate of the leading index points to the possibility of modest growth in aluminum mill products activity over the next few months.

The **primary aluminum leading index** rose 0.4% in February, climbing to 86.0 from a revised 85.7 in January, while the index's 6-month smoothed growth rate increased to -4.3% from a revised -6.2% in January. The February gain in the leading index was the result of strength in two components, the length of the average workweek in primary aluminum establishments and the S&P stock price index for aluminum companies, which rose to its highest level in just over a year. Despite increasing 2 consecutive months, the primary aluminum leading index is not yet signaling a major turnaround in domestic primary aluminum activity in the near future. Much of any increase in future demand that the leading index might be pointing to will likely be met by imports, owing to cutbacks in domestic production caused by the Western energy crisis. (Tables and charts for the primary aluminum indexes are in a separate file.)

The **copper leading index** fell 1.1% in February to 123.6 from a revised 125.0 in January, and the index's 6-month smoothed growth rate slipped to -4.7% from a revised -3.4% in January. Six of the index's seven components moved lower in February. The strongest negative influence on the leading index was a sharp drop in overtime hours in copper rolling drawing and extruding establishments, down to its lowest level since the summer of 1991. The yield spread between the U.S. 10-year Treasury Note and the federal funds rate was the only compo-

nent that increased, as it posted its third largest gain in the past 10 years. The growth rate of the copper leading index, which reflects the business cycle, continues to signal a decline in U.S. copper industry activity in the months ahead. High energy costs are also likely to hold down production of domestic primary copper.

Indicators Still Point to Little Growth for Metal Prices

The **metals price leading index** edged up 0.2% in February, the latest month for which it is available, moving to 102.9 from a revised 102.7 in January. The index's 6-month smoothed growth rate also increased, climbing to -3.8% from a revised -5.1% in January. Three of the index's four components were available for the February index calculation. A sizeable gain in the yield spread provided the only positive contribution to the net increase in the leading index. Meanwhile, the growth rates of the index measuring the trade-weighted average exchange value of other major currencies against the U.S. dollar and the inflation-adjusted value of new orders for U.S. nonferrous metals both moved lower. The fourth index component, the growth rate of the Economic Cycle Research Institute's (ECRI) 16-Country Long Leading Index, was available only through January, when it decreased for the seventh time in the past 9 months, falling to its lowest rate in 10 years. The ECRI index attempts to forecast changes in future economic activity for major industrialized countries.

The 6-month smoothed growth rate of the inflation-adjusted value of U.S. nonferrous metal products inventories inched up to 3.0% in February from a revised 2.9% in January. The actual level of these inventories, which rose a modest amount, tends to move inversely with metal price growth.

The growth rate of the metals price leading index continues to signal little or no growth for most metal prices in the near term. The growth rate of U.S. nonferrous metal products inventories, which has generally been increasing since October 1999, also points to little growth in metal prices. However, at some point in the future, production cutbacks by several domestic metals producers could boost prices if growth in the world's industrialized economies begins to increase.

Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

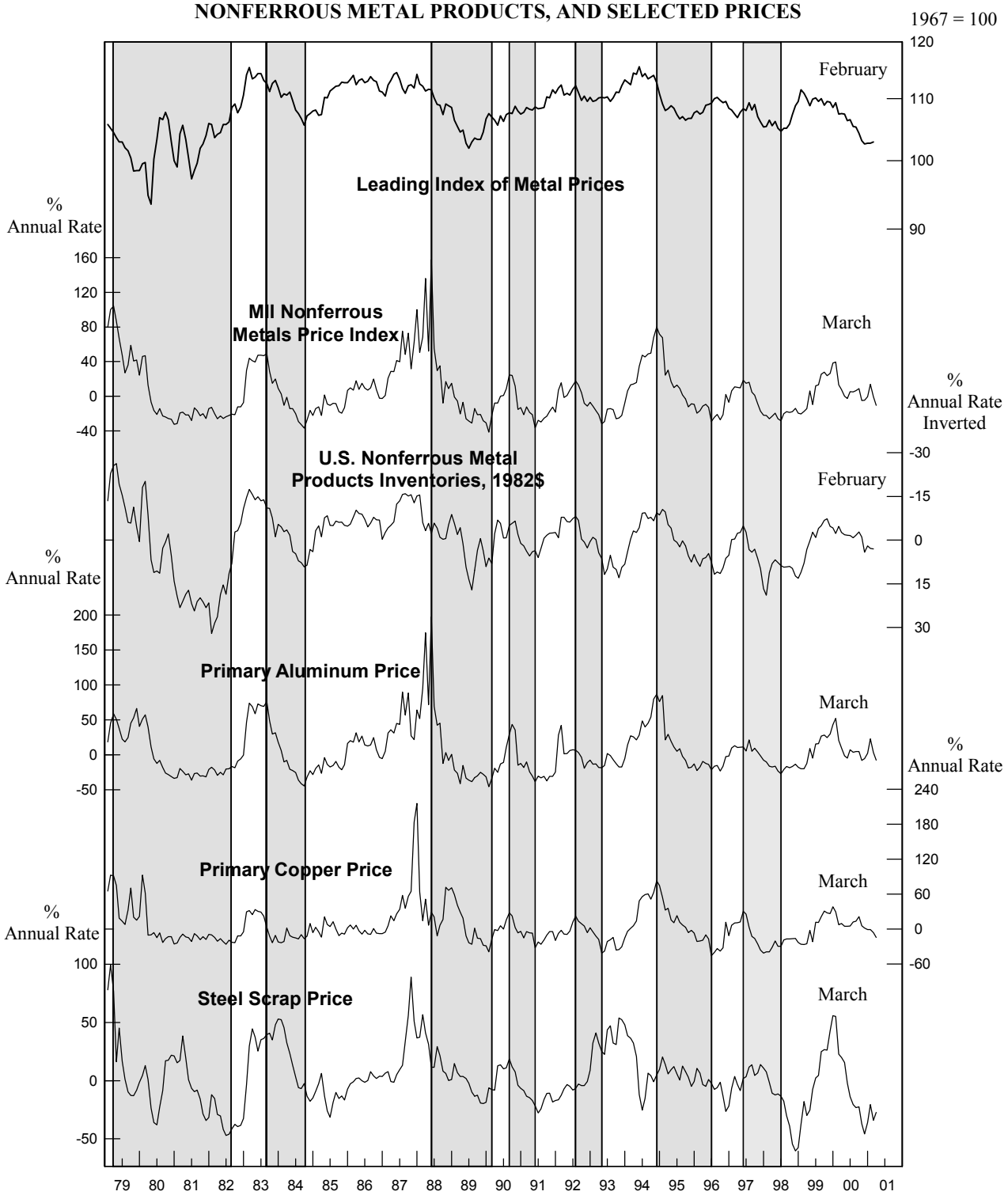
		Six-Month Smoothed Growth Rates				
	Leading Index of Metal Prices (1967=100)	MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982$)	Primary Aluminum	Primary Copper	Steel Scrap
2000						
February	107.4r	13.4	-4.7	20.6	7.6	22.7
March	107.5r	7.6	-2.6	9.6	9.8	19.8
April	107.4r	0.2	-1.8	-1.7	4.9	15.7
May	106.3r	-2.4	-1.7	-4.9	4.9	-1.9
June	106.5r	5.4	-1.6	6.9	5.2	-13.7
July	105.4r	5.1	-0.8	3.3	12.4	-20.5
August	105.3r	6.6	-1.7	4.4	13.9	-23.2
September	104.3r	8.9	-2.8	4.5	21.7	-22.4
October	103.1r	-4.9	-1.1r	-8.4	5.7	-37.0
November	102.6r	-4.7	4.2	-5.7	1.8	-45.6
December	102.7r	-0.5	2.0	2.1	-0.7	-35.9
2001						
January	102.7r	13.7	2.9r	22.7	-0.8	-20.4
February	102.9	-0.5	3.0	3.0	-5.8	-34.0
March	NA	-10.5	NA	-7.8	-14.4	-27.2

NA: Not available *r: Revised*

Note: The components of the Leading Index of Metal Prices are the spread between the U.S. 10-year Treasury Note and the federal funds rate, and the 6-month smoothed growth rates of the deflated value of new orders for nonferrous metals, the Economic Cycle Research Institute's 16-Country Long Leading Index, and the reciprocal of the trade-weighted average exchange value of the U.S. dollar against other major currencies. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metals and nonferrous metal products. Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.

Sources: U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); U.S. Census Bureau; the Economic Cycle Research Institute, Inc. (ECRI); and Federal Reserve Board.

CHART 1.
LEADING INDEX OF METAL PRICES AND GROWTH RATES OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF NONFERROUS METAL PRODUCTS, AND SELECTED PRICES



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

U.S. Geological Survey, April 2001

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
April	128.6	-1.1	116.8	3.6
May	127.1	-3.3	115.9	1.5
June	126.0	-4.7	116.3	1.6
July	125.3	-5.2	116.1	1.0
August	124.8	-5.4	115.2	-0.7
September	125.5	-3.9	114.9	-1.2
October	123.4	-6.4r	114.2r	-2.4r
November	123.1	-6.1	113.6	-3.2r
December	121.9r	-6.9r	111.0r	-7.1r
2001				
January	122.5r	-5.1r	110.2	-7.8
February	122.3r	-4.3r	109.4	-8.3
March	122.3	-3.7	NA	NA

NA: Not available ***r:*** *Revised*

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 3.
The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**February**	**March**
1. Average weekly hours, primary metals (SIC 33)	-0.5r	-0.2
2. S&P stock price index, machinery, diversified	-0.1	-0.1
3. Ratio of price to unit labor cost (SIC 33)	0.1	NA
4. JOC-ECRI metals price index growth rate	-0.1	-0.1
5. New orders, primary metals, (SIC 33) 1982$	0.0	NA
6. Index of new private housing units authorized by permit	-0.1	NA
7. Growth rate of U.S. M2 money supply, 1996$	0.3	NA
8. Purchasing Managers' Index	0.1r	0.4
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.3r	0.0

Coincident Index	**January**	**February**
1. Industrial production index, primary metals (SIC 33)	-0.4r	-0.1
2. Total employee hours, primary metals (SIC 33)	-0.4	-0.7
3. Value of shipments, primary metals, (SIC 33) 1982$	0.0	0.0
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.7r	-0.7

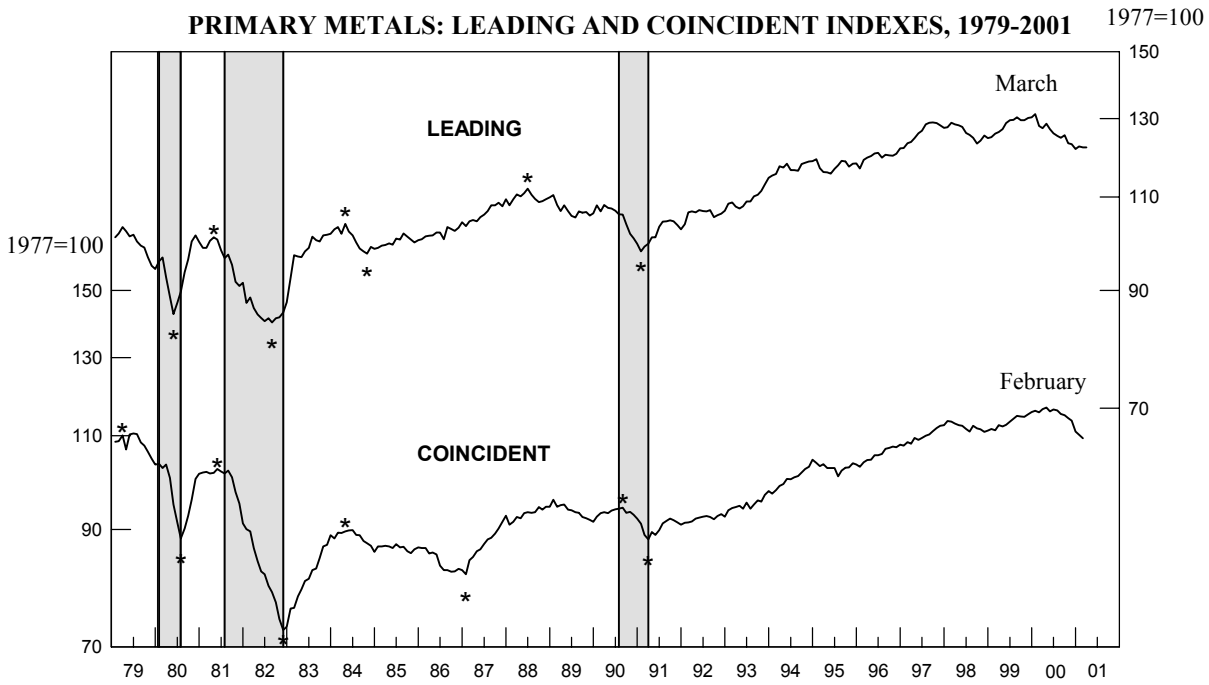
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's; 3, U.S. Geological Survey; 4, Journal of Commerce and Economic Cycle Research Institute, Inc.; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

NA: Not available ***r:*** *Revised*

Note: A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

CHART 2.

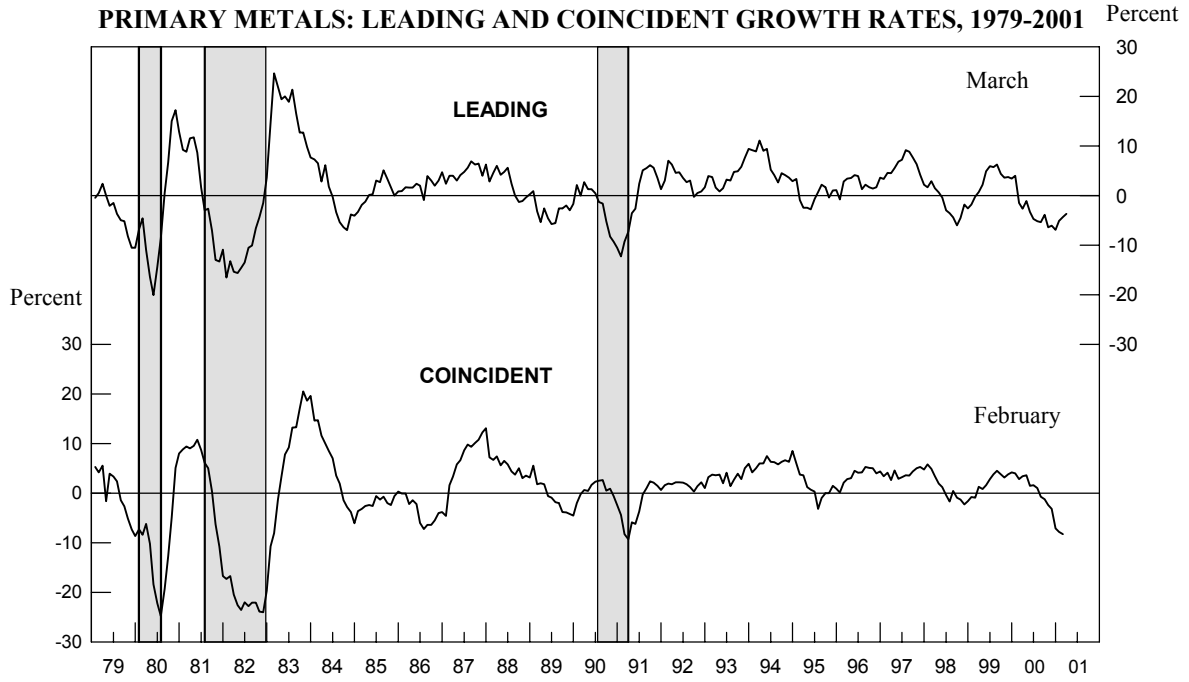
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1979-2001



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 3.

PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1979-2001



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, April 2001

Table 4.
The Steel Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
March	111.2r	-2.2r	104.0	4.2
April	110.6	-3.3r	103.4	2.3
May	109.8	-4.3	103.2	1.5
June	108.7r	-5.9r	103.5	1.5
July	107.1	-7.8	103.1	0.3
August	107.3	-6.8	102.5	-1.1
September	107.5	-5.7	102.3	-1.5
October	105.2	-8.9r	101.2r	-3.4r
November	104.9	-8.4	100.5	-4.5
December	103.7r	-9.3r	98.2	-8.2
2001				
January	103.9r	-7.7r	97.6r	-8.5r
February	104.1	-6.0	97.6	-7.7

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

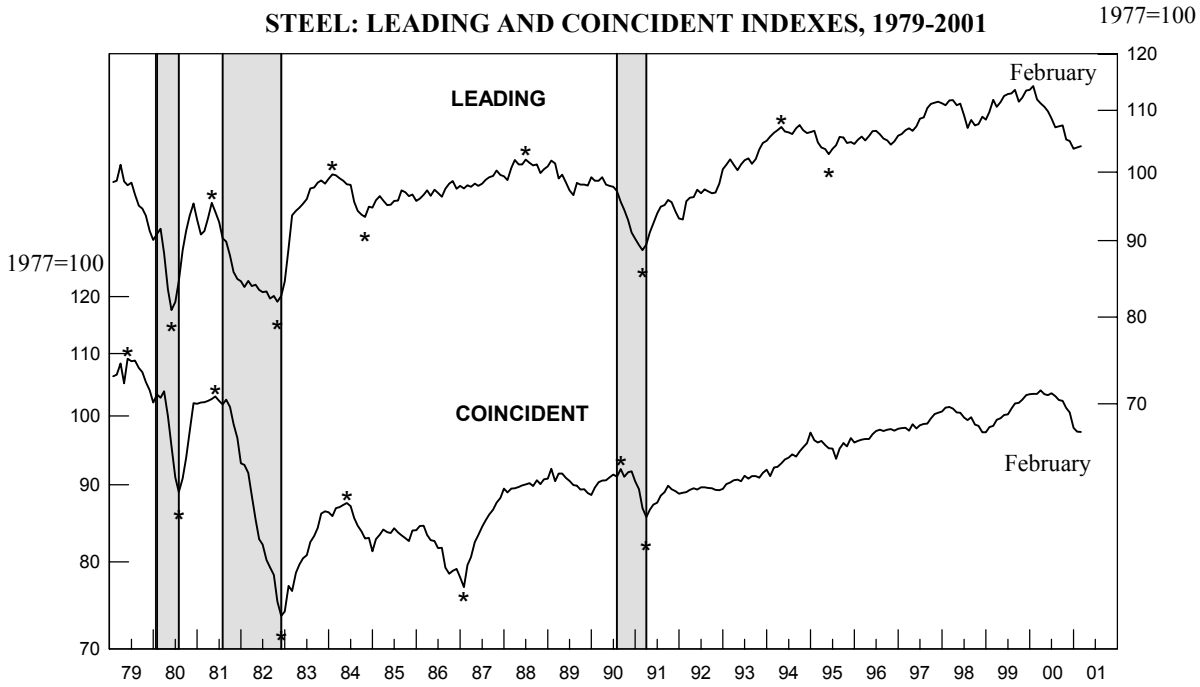
Leading Index	**January**	**February**
1. Average weekly hours, blast furnaces and basic steel products (SIC 331)	-0.1r	-0.2
2. New orders, steel works, blast furnaces, and rolling and finishing mills, 1982$, (SIC 331)	0.1	0.1
3. Shipments of household appliances, 1982$	0.2	-0.2
4. S&P stock price index, steel companies	0.0	0.4
5. Industrial production index for automotive products	-0.5r	0.1
6. Growth rate of the price of steel scrap (#1 heavy melting, $/ton)	0.3	-0.2
7. Index of new private housing units authorized by permit	0.7	-0.1
8. Growth rate of U.S. M2 money supply, 1996$	0.2	0.3
9. Purchasing Managers' Index	-0.5	0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.4r	0.3
Coincident Index		
1. Industrial production index, basic steel and mill products (SIC 331)	-0.3r	0.1
2. Value of shipments, steel works, blast furnaces, and rolling and finishing mills (SIC 331), 1982$	0.4r	0.0
3. Total employee hours, blast furnaces and basic steel products (SIC 331)	-0.8r	-0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.6r	0.0

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey; 4, Standard & Poor's; 5, Federal Reserve Board; 6, Journal of Commerce and U.S. Geological Survey; 7, U.S. Census Bureau and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

r: Revised

CHART 4.

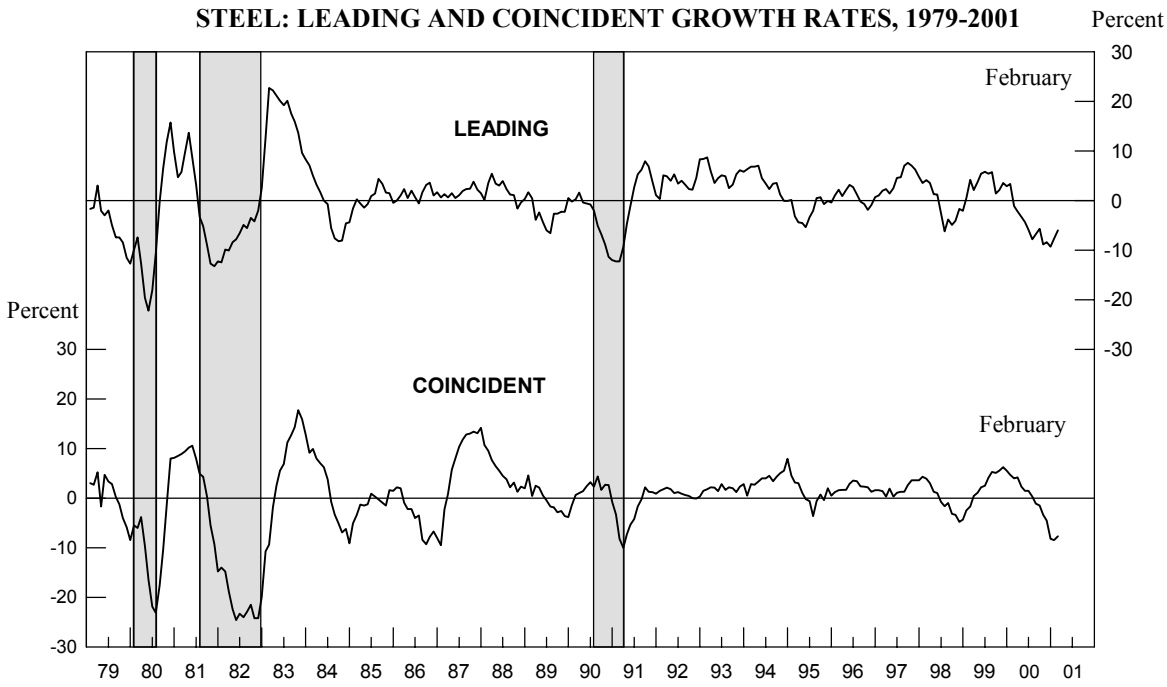
STEEL: LEADING AND COINCIDENT INDEXES, 1979-2001



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 5.

STEEL: LEADING AND COINCIDENT GROWTH RATES, 1979-2001



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, April 2001

Table 6.
The Aluminum Mill Products Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
March	159.1r	1.5	143.0	0.9
April	159.9	2.2r	144.7	2.8
May	157.8	-0.6	144.2	1.7
June	157.7r	-0.7r	142.5	-0.8
July	154.4	-4.4	144.0	1.2
August	158.2	0.4	142.4	-1.1
September	160.3	3.0	141.2	-2.3
October	157.7	-0.4r	140.4	-3.2
November	158.0	-0.1	140.3	-3.2
December	158.1r	-0.2r	143.2r	0.7r
2001				
January	159.4r	1.3r	143.4r	1.0r
February	160.2	2.2	142.3	-0.6

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

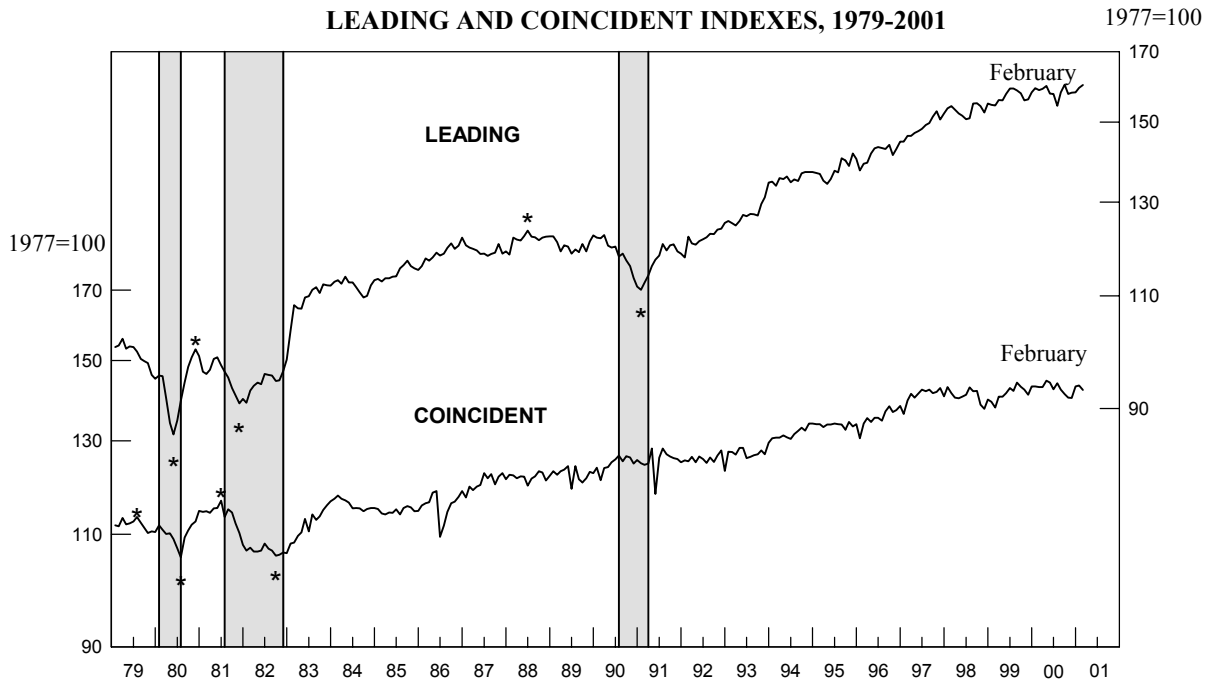
Table 7.
The Contribution of Each Aluminum Mill Products Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**January**	**February**
1. Average weekly hours, aluminum sheet, plate, and foil (SIC 3353)	0.7r	-0.5
2. Index of new private housing units authorized by permit	0.8	-0.2
3. Industrial production index for automotive products	-0.6r	0.2
4. Construction contracts, commercial and industrial (square feet)	0.4	0.1
5. Net new orders for aluminum mill products (pounds)	-0.3	0.3
6. Growth rate of U.S. M2 money supply, 1996$	0.3r	0.3
7. Purchasing Managers' Index	-0.6	0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.8r	0.4
Coincident Index		
1. Industrial production index, aluminum sheet, plate, and foil (SIC 3353)	-0.7r	0.1
2. Total employee hours, aluminum sheet, plate, and foil (SIC 3353)	0.6r	-1.1
Trend adjustment	0.2	0.2
Percent change (except for rounding differences)	0.1r	-0.8

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Federal Reserve Board; 4, F.W. Dodge, Division of McGraw-Hill Information Systems Company; 5, The Aluminum Association, Inc. and U.S. Geological Survey; 6, Federal Reserve Board, Conference Board, and U.S. Geological Survey; 7, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted.

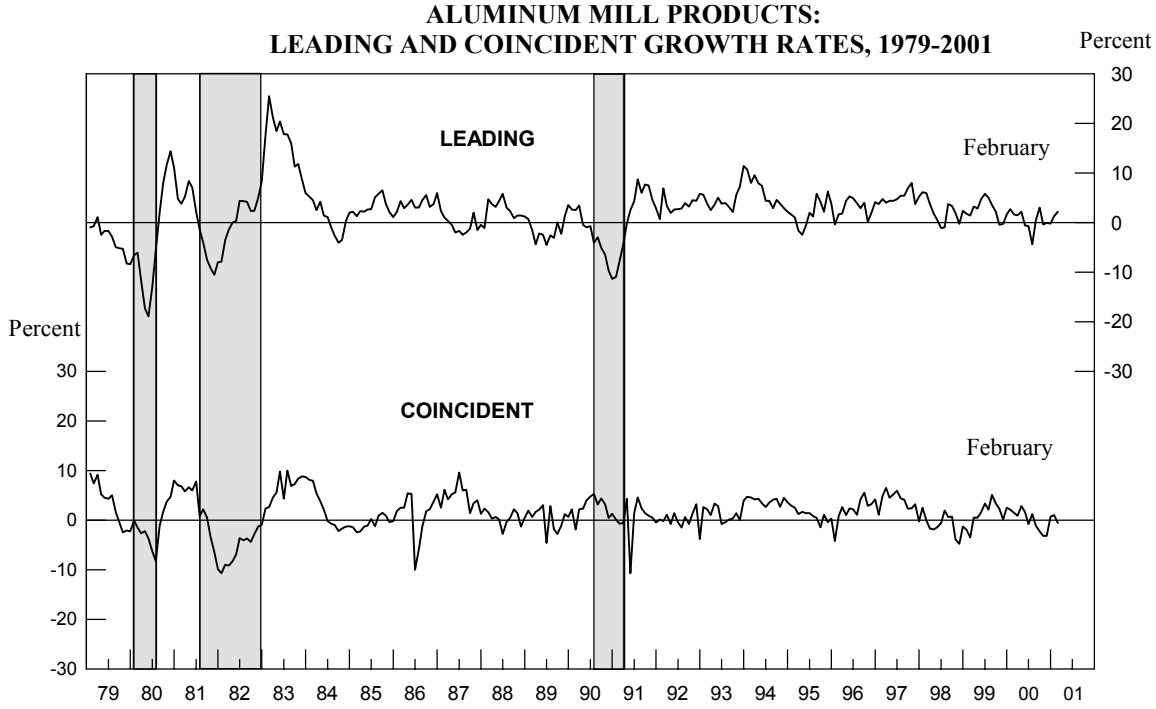
r: Revised

CHART 6.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT INDEXES, 1979-2001



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 7.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT GROWTH RATES, 1979-2001



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, April 2001

Table 8.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
March	128.2	-3.9	122.8	-1.3
April	129.2	-2.5	120.9	-3.6
May	129.1	-2.5	123.3	0.7
June	128.0	-3.9	122.8	0.1
July	127.1	-4.5	121.6	-1.5
August	127.0	-4.0	121.2	-1.6
September	127.2	-3.0	121.6	-0.7
October	123.7	-7.3	121.0	-1.5
November	124.5	-5.3	122.0	0.2
December	124.6	-4.6	119.8	-3.1
2001				
January	125.0r	-3.4r	119.9r	-2.7r
February	123.6	-4.7	122.1	0.7

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

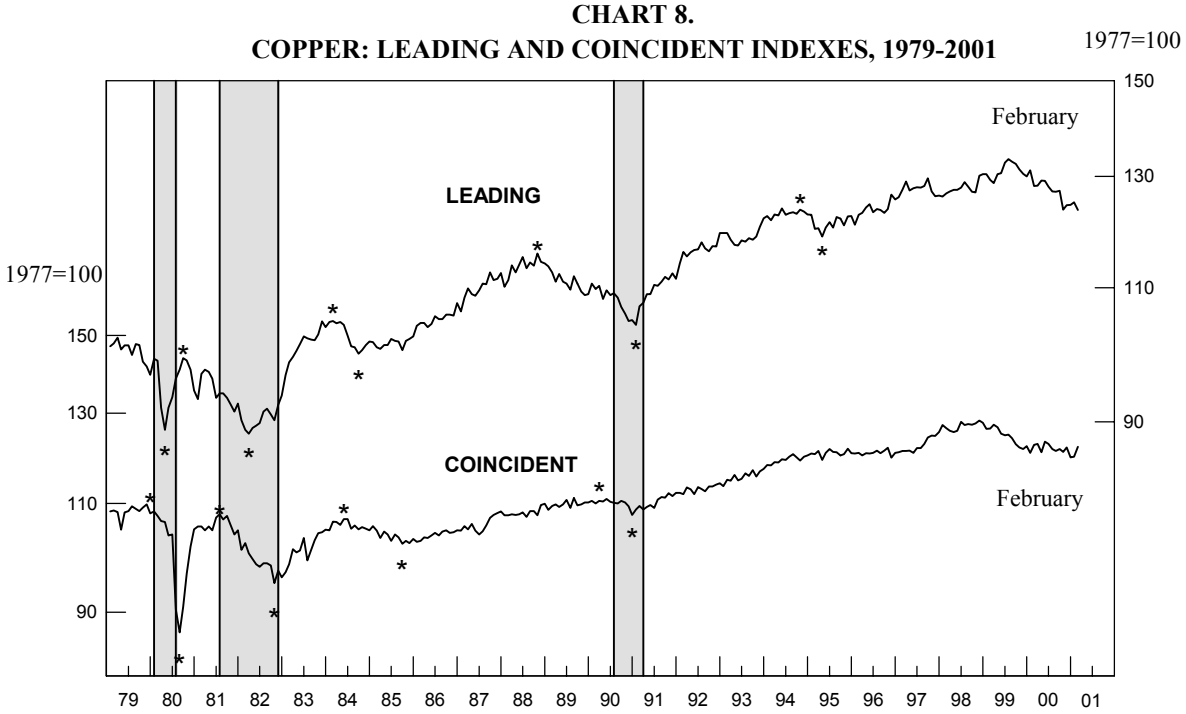
Table 9.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**January**	**February**
1. Average weekly overtime hours, rolling, drawing, and extruding of copper (SIC 3351)	-0.4	-0.7
2. New orders, nonferrous and other primary metals, 1982$	0.0	-0.1
3. S&P stock price index, building materials companies	0.5	-0.1
4. Ratio of shipments to inventories, electronic and other electrical equipment (SIC 36)	-0.9r	-0.2
5. LME spot price of primary copper	0.0	-0.2
6. Index of new private housing units authorized by permit	0.8	-0.2
7. Spread between the U.S. 10-year Treasury Note and the federal funds rate	0.3	0.3
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.3r	-1.2
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (SIC 3331)	0.1	-0.1
2. Total employee hours, rolling, drawing, and extruding of copper (SIC 3351)	0.3	1.8
3. Copper refiners' shipments (short tons)	-0.4r	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.1r	1.8

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, Census Bureau and U.S. Geological Survey; 5, London Metal Exchange; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3, 5, and 7 of the leading index.

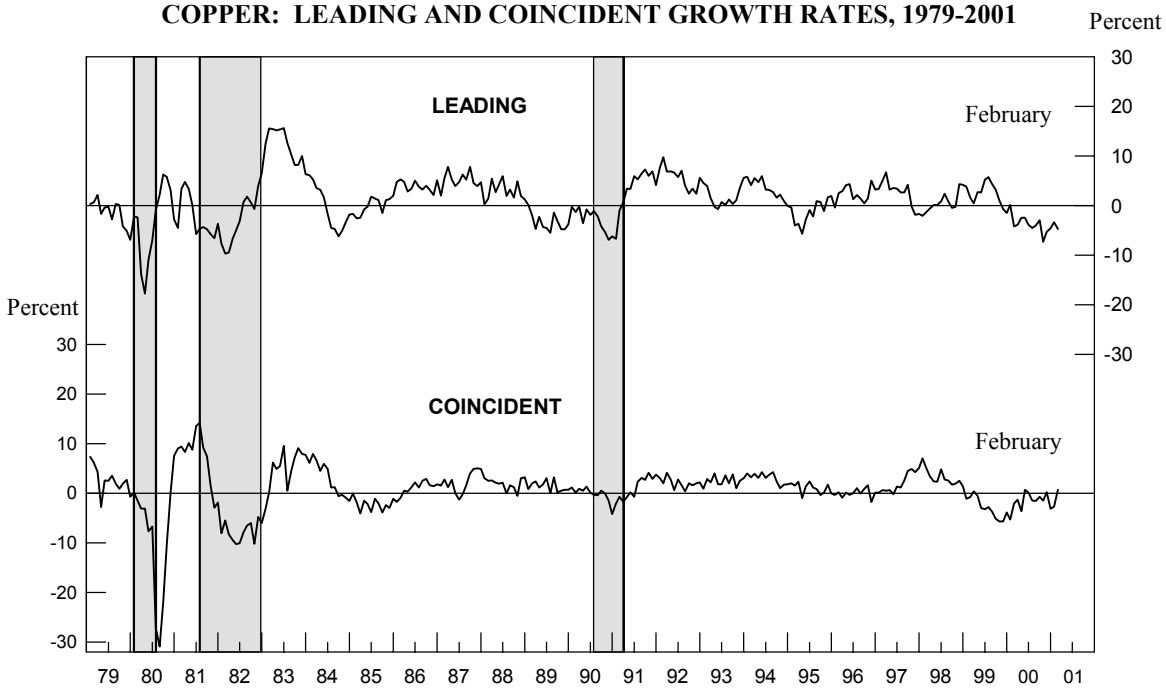
NA: Not available *r: Revised*

CHART 8.
COPPER: LEADING AND COINCIDENT INDEXES, 1979-2001



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 9.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1979-2001



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, April 2001

Explanation

Each month, the U.S. Geological Survey tracks the effects of the business cycle on five U.S. metal industries by calculating and publishing composite indexes of leading and coincident indicators. Wesley Mitchell and Arthur Burns originated the cyclical-indicators approach for the economy as a whole at the National Bureau of Economic Research in the mid-1930's. Over subsequent decades this approach was developed and refined, mostly at the National Bureau, under the leadership of Geoffrey H. Moore.[1]

A business cycle can briefly be described as growth in the level of economic activity followed by a decline succeeded by further growth. These alternating periods of growth and decline do not occur at regular intervals. Composite indexes, however, can help determine when highs and lows in the cycle might occur. A composite index combines cyclical indicators of diverse economic activity into one index, giving decision makers and economists a single measure of how changes in the business cycle are affecting economic activity.

The indicators in the metal industry leading indexes historically give signals several months in advance of major changes in a coincident index, a measure of current metal industry activity. Indicators that make up the leading indexes are, for the most part, measures of anticipations or new commitments to various economic activities that can affect the metal industries in the months ahead.

Composite coincident indexes for the metal industries consist of indicators for production, shipments, and total employee hours worked. As such, the coincident indexes can be regarded as measures of the economic health of the metal industries.

Four of the metal industry coincident indexes, those for primary metals, steel, primary aluminum, and aluminum mill products, reflect their classifications in the U.S. Standard Industrial Classification (SIC). The SIC is the main classification used by the United States government and industry in collecting and tabulating economic statistics. The coincident index for copper is a blend of two different copper industries, primary smelting and refining of copper and rolling, drawing, and extruding of copper.

Of the five metal industries, primary metals is the broadest, consisting of 26 different metal processing industries. The steel, aluminum, and copper industries are parts of the primary metals industry.

The metal industry leading indexes turn before their respective coincident indexes an average of 9 months for primary metals and 8 months for steel and copper. The average lead time for the primary aluminum leading index is 6 to 8 months, and the average lead time for the aluminum mill products leading index is 6 months.

[1]**Business Cycle Indicators, A monthly report from The Conference Board** (March 1996).

The leading index of metal prices, also published in the *Metal Industry Indicators*, is designed to signal changes in a composite index of prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange. On average, this leading index indicates significant changes in price growth about 8 months in advance.

The growth rate used in the *Metal Industry Indicators* is a 6-month smoothed growth rate at a compound annual rate, calculated from a moving average. Moving averages smooth fluctuations in data over time so that trends can be observed. The 6-month smoothed growth rate is based upon the ratio of the latest monthly value to the preceding 12-month moving average.

$$\left[\left(\frac{\text{current value}}{\text{preceding 12-month moving average}}\right)^{\frac{12}{6.5}} - 1.0\right] * 100$$

Because the interval between midpoints of the current month and the preceding 12 months is 6.5 months, the ratio is raised to the 12/6.5 power to derive a compound annual rate.

The growth rates measure the near-term industry trends. They, along with other information about the metal industries and the world economy, are the main tools used to determine the outlook of the industries. A 6-month smoothed growth rate above +1.0% usually means increasing growth; a rate below -1.0% usually means declining growth.

The next summary is scheduled for release on MINES FaxBack at 10:00 a.m. EDT, Friday, May 18. Access MINES FaxBack from a touch-tone telephone attached to a fax machine by dialing 703-648-4999. The address for *Metal Industry Indicators* on the World Wide Web is: http://minerals.usgs.gov/minerals/pubs/mii/

The ***Metal Industry Indicators*** is produced at the U.S. Geological Survey by the Minerals Information Team. The report is prepared by Kenneth Beckman (703-648-4916), e-mail (kbeckman@usgs.gov), and Gail James (703-648-4915), e-mail (gjames@usgs.gov). The former Center for International Business Cycle Research, under the direction of Dr. Geoffrey H. Moore, and the former U.S. Bureau of Mines developed the metal industry leading and coincident indexes in the early 1990's. Customers can send mail concerning the *Metal Industry Indicators* to the following address:

U.S. Geological Survey
Minerals Information Team
988 National Center
Reston, Virginia 20192